ABSTRACT OF THE DISCLOSURE

Images are presented on a display to produce the perception of viewpoint motion in a three-dimensional workspace. The user can indicate a point of interest (POI) or other region on a surface in an image and request viewpoint motion. In response, another image is presented from a viewpoint that is displaced as requested. The user can request viewpoint motion radially toward or away from the POI, and can also request viewpoint motion laterally toward a normal of the surface at the POI. Radial and lateral viewpoint motion can be combined. The orientation of the viewpoint can be shifted during lateral motion to keep the POI in the field of view, and can also be shifted to bring the POI toward the center of the field of view. In a sequence of steps of viewpoint motion, the radial viewpoint displacement in each step can be a proportion of the distance to the POI so that the radial displacements follow a logarithmic function and define an asymptotic path that approaches but does not reach the POI. ~~One proportion can be used for approaching the POI and another for retreating from the POI so that an approach step followed by a retreat step returns the viewpoint to the same position. Similarly, each step's lateral viewpoint displacement can be a proportion of the distance to the normal, either along an arc or a chord, so that the lateral displacements define an asymptotic path that approaches the normal. The proportion for lateral displacements can be greater than that for radial approach so that the viewpoint reaches the normal more quickly than it reaches the POI.~~ While requesting viewpoint motion with a keyboard, the user can independently request POI motion with the mouse. In response, the POI moves within the bounds of the surface that includes the POI, and a shape within the image indicates the POI position.